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DETROIT RIVER POSTAL SERVICE.

The project to have Congress appropriate $12,000 or $14,000 for the purchase of a steam yacht for the Detroit river marine postal service received a setback on Monday, when Congressman Corliss, of Detroit, appeared before the committee on postoffices and postroads and submitted a few suggestions. Mr. Corliss stated that at the last session of Congress he gladly gave his approval to an appropriation of $3,500 for this service and was now surprised to find that its cost had exceeded $8,000, or nearly $5,000 in excess of the appropriation. This he considered unnecessary and most extravagant. The government last season, he said, paid about $3,000, nearly the entire appropriation, for a steam yacht which was used simply for the purpose of hauling the mail carrier from the dock out to the middle of the river in a rowboat, a distance of less than 2,000 feet, for the purpose of delivering and receiving mail. He had found, also, that the yacht engaged for this service had been used for pleasure parties by government officials, and was almost daily used to carry mail to and from vessels lying at the docks from one end of the city of Detroit to the other, while being loaded and unloaded. Mr. Corliss submitted that it is unnecessary to maintain a yacht for the accommodation of vessels stopping at Detroit, and stated that he could not justify the extravagance of maintaining a steam yacht for this service, when it can be performed with equal efficiency by rowboats manned by competent mail carriers at a cost of several hundred dollars only. He explained to the committee that a steam yacht could not safely be used for close approach to a moving steamer in Detroit River and suggested that for this reason rowboats should be resorted to exclusively in the performance of the river postal service.

Manager C. F. Bielman, of the Star-Cole line at Detroit, denies the statement of Representative Corliss that the government mailboat had been used for pleasure purposes. He furnished the boat last season, and under his contract paid all wages, fuel bills, etc. An order prohibiting outsiders to ride was enforced so strictly that he never made a trip himself. The Detroit marine engineers are indignant over the attitude assumed by Representative Corliss toward the postal service on the river.

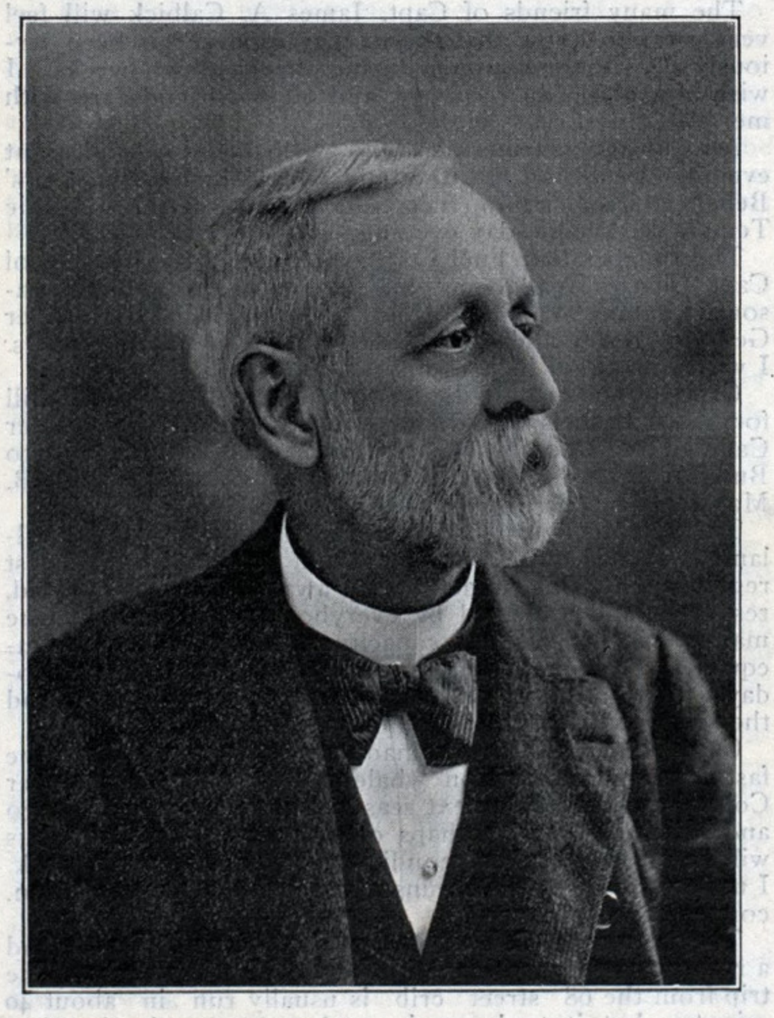
Supt. Machen, of the free delivery postal service, says: "These stories regarding the misuse of the small steamer employed in towing our mail rowboats on Detroit River, are absolutely false. This little vessel is now engaged under a contract at a most reasonable rate of compensation, less than $15 a day, including pilots, engineer, lookout man, fuel, supplies, repairs, etc., and we are exceedingly fortunate in being able to conduct the service at so low a rate. As to the boat being used as a pleasure yacht, that is all rubbish. She is only fit for service in the river, and I would not trust myself aboard her on one of the lakes for a thousand dollars a minute. This statement is on a par with others that have been put in circulation to create the impression that certain trips on the lakes which have been taken by postal officials and their friends have been at government expense. This is a libel, as on the trip referred to we hired our own boat and paid for it out of our own pockets, and the vessel we employed has never been in the government service. I have been on board the mail steamer with Postmaster Enright for purposes of official inspection, and I want to say that I regard the service as carried on with the greatest possible economy and efficiency. It is ridiculous to say that the steamer is not necessary. I have seen occasions when the rowboats would be endeavoring to meet vessels going both ways, when a signal would be made from shore that a special delivery letter had been received for a vessel expected to pass within a few minutes. The steamer promptly runs to the dock, gets the letter, brings it out to one of the rowboats and delivery is immediately made and sametimes an answer taken off."

CAPT. JAMES N. THOMPSON.

(U. S. Supervising Insector of Steamboats for the Sixth District.)

James W. Thompson, Supervising Inspector of the Sixth District, was born at Ithaca, N. Y., in 1840. He removed at an early age with his parents to Pittsburg, Pa., where in 1856 he began his steamboat career, as second clerk on the steamer Clara Dean, running between Pittsburg and Louisville, Ky. From that time to the date of his appointment by President Cleveland in 1894, he was actively engaged in steamboating on the Ohio, Mississippi, Cumberland, Tennessee, White and Arkansas Rivers.

For 18 years immediately preceding his appointment, Capt. Thompson was in the employ of the Memphis and Arkansas River Packet Co., on the various steamers of



CAPT. THOMPSON, STEAMBOAT INSPECTION SERVICE.

that line, running between Memphis, Tenn., on the Mississippi River, and Pine Bluff and Little Rock on the Arkansas River.

LAKE CONTRACTORS TO THE FRONT.

Toledo dredge men are at the front when it comes to handling big contracts for dredging work. At Boston, Mass., last week, bids were opened for $1,145,000 worth of dredging in Boston harbor, and it was found that among all the big dredging firms that bid, the Breyman Bros., John and Eugene, of Toledo, were the lowest. As George H. Breyman & Bro. have a big contract for dredging along the line of the 20-foot channel, it may be that the Breyman Bros. may send two dredges down via the Welland canal. If John and Eugene Breyman do not conclude to send the dredges, they will build a plant in the East. Who knows but they might dig up some of those tea boxes thrown overboard in the Boston harbor previous to the revolutionary war.

THE REVENUE CUTTER SERVICE.

The chief of the revenue service, Capt. Shoemaker, has now completed plans and specifications for two new revenue cutters authorized to be built by act of Congress June 11, 1896.

The dimensions of the two revenue cutters are to be 205 feet over all and 32 feet beam. They are of course to be up to the highest standard of classification, known in the United States, and while it is very probable our special from Washington does not distinctly inform us that they will be built under the superivision of the rules of the American Shipmasters' Association of New York, it is learned, however, that these two revenue cutters are to be equipped with steam steering gear, steam windlasses and capstans, triple expansion engines of 2600-horse power and with Scotch type boilers. They are to be sister ships in every respect and will cost about $190,000 each. It is now the intention of the Chief of the Revenue Service to have these vessels ready to go into service at the early opening of navigation next season. The Record is furthermore informed that proposals for the construction of these two handsome little ships will be sent out from the department in the course of a few days.

The lake shipbuilders who may have still a couple of hundred feet on which to lay the keels of these vessels or even one of them will no doubt bring the contract to the lakes if they send in their bids.

THE ASHTABULA BRIDGE CASE.

The Ashtabula River bridge case came on for hearing in the Supreme Court at Washington last Friday, Counsel Greene appearing for the Lake Shore, the plaintiff in error, and Representative Burton for Humphrey, the relator and defendant in error. Each attorney occupied about an hour. During Mr. Greene's argument Justices White, Brewer, Shiras and Harlan asked a number of questions which seemed to indicate a leaning on their part toward the contention that the authority conferred on the secretary of war by the act of September 16, 1890, does not stop the state from taking action to have a bridge removed, when that bridge was built without legislative authority. That is the largest question in the case.

A FOREIGN ACCIDENT.

The steam yacht Argo that was cut down near New Orleans last week by the steamer Albert Dumois, and by which three newspaper men lost their lives, was formerly a Toledo boat and ran between Toledo and Put-in-Bay. She was then called the Leila. She was purchased by Calvin Cone and Peter Berdan, of Toledo, and was placed on the Put-in-Bay route. She was sold to Detroit parties and afterward came into the hands of Chicagoans. She ran at Chicago during the fair. The Leila was built by the Herreschoffs at Bristol, R. I., in 1878. She was fitted with a coiled boiler, was 48.20 gross tons, 95 feet 7 inches long; 15 feet 2 inches beam, and 6 feet 4 inches depth. She was a very swift little craft. After she left Toledo she was fitted, it is said, with a small Scotch type boiler.

A LARGE OCEAN STEAMER.

The new Hamburg-American line steamer Pennsylvania, said to be the largest freight-carrying steamer in the world, left port on Saturday last on her trial trip to New York.

The Pennsylvania is 568 feet long, has 62 feet beam, is 24 feet deep, is of 20,000 tons displacement, and her dead weight-carrying capacity is nearly 14,000 tons. She has quadruple expansion engines with about 7,000 combined horse-power, designed to develop a speed of 15 knots. The Pennsylvania has accommodation for over two hundred cabin passengers and for 1,500 steerage passengers.

NEWS AROUND THE LAKES.

CLEVELAND.

Special Correspondence to the Marine Record.

The Marine Record telephone at this port is now No. 2479 and our friends cannot ring us up too often.

At the Ship Owners' Drydock the Pontiac goes in today for a new wheel. The Wallula will not be out of dock for about a month yet.

Capt. L. S. Sullivan, manager of the only Toledo Harbor Tug Line, visited the city this week in the interests of his towing company. All men speak well of the Sullivan Towing Co., relative to the treatment which they receive at their hands.

Steam towing machines have been ordered for the steamers Italia and Caledonia. A towing machine has also been ordered for the steel towbarge now on the docks at the yard of the Globe Iron Works Co. in Cleveland, all to the order of Capt. James Corrigan.

The annual meeting of the Minch Transit Co. was held at Rockport last week and the old officers and directors were re-elected. They are as follows: H. D. Coffinberry, president; V. T. Palmer, vice president; P. J. Minch, secretary and treasurer; directors, H. D. Coffnberry, John B. Guthrie, V. T. Palmer, Capt. William Gerlach and P. J. Minch

The heavy amount of work done on the steel steamer Grecian is about completed at the Cleveland drydock, she has been in for three weeks and had thirty-one shell plates taken off, eleven of which were re-rolled and twenty renewed. This is a large bottom damage and although the dock has been in much demand the work was carried out thoroughly and with haste.

The annual report of the Floating Bethel, Capt. J. D. Jones, shows the usual good work done by this well known missionary of gospel and maintenance. In his twenty-ninth annual report and thirtieth year of work the chaplain is more in evidence than ever. I can honestly say and from my own knowledge, that there is no more beneficent help in this city than that afforded by the Floating Bethel. Furthermore, the officers' names alone insure integrity in every branch of the work.

The Cleveland City Forge, whose advertisement appears in our columns this week, is now working on a shaft three feet in diameter and furthermore is one of the most prominent shaft casters in the country. In the naval as well as the merchant service the Cleveland City Forge Co. cuts quite a figure and secures contracts where other firms cannot compete. Capt. Coe, manager of the Cleveland City Forge Co., is not only one of our best marine men, but he also mixes well with salt water builders.

It is the intention of the officials of the treasury department to formally accept the new revenue cutter Gresham this week. The vessel will during the remainder of the winter season remain at the docks of the Globe Ironworks Co., where she now lies, in charge of six or eight men who will be detailed to her. She will temporarily be in command of Lieut. Moore. Four or five men, it is understood, have been, or will be, ordered from Milwaukee to serve on board the Gresham until she is placed in commission.

Capt. Charles Wallace will be with the Independent Fuel Co., of Chicago, next season. Capt. Wallace has only been ashore one season. His last command was the steamer George Presley. This is a change around between the outside managers of the two large fueling companies at Chicago, Capt. Geo. Tebo, formerly with the Independent Co., now taking the position with the O. S. Richardson Fueling Co., who have the finest coal docks at the mouth of Chicago harbor with facilities for carrying on a very large business

J. C. Gilchrist is engaged in putting the twenty-four vessels of the fleet of which he is managing owner into two corporations, one of which comprises the smaller vessels first acquired by Mr. Gilchrist, and which will be known as the Gilchrist Transportation Co. A name for the second corporation, which will comprise twelve of the better class of vessels, has not yet been decided upon, but Inland Transportation Co. is talked of. Owners of these vessels are mainly J. C. Gilchrist and his relatives, together with R. E. Schuck of Sandusky.

At the regular weekly meeting of the local lodge of Shipmasters' Association, Capts. J. A. Holmes, John Lowe and Carleton Graves were appointed a committee to make an effort to make arrangements to have papers delivered to boats passing Detroit. The masters will try to secure a man at Detroit who will handle the leading lake papers at a fixed price. Capt. J. A. Holmes, who attended the meeting of the grand lodge at Washington last week, stated that he was assured while at the capital that the marine postal service at Detroit would be continued. This matter is being discussed at all the leading ports and it looks as if Congressman Corliss and Capt. Westcott will get knocked out.

On the large contract for dredging given out by the Cleveland Ship Building Co., at Lorain, the firm of Stang Bros. was found to be the lowest bidders. Papers were signed in the office of the Cleveland Ship Building Co. a day or two ago, which awarded to Mr. Stang the dredging of 130,000 yards of earth as well as all the sheet-piling and 800 feet of docking on the river front. The dredging contract includes two slips each 525 feet in length, the excavations for the dry dock and the dredging to the dock line on the river front. The contract will consume fully 2,000 piles. Mr. N. C. Fisher, of Vermillion, owner of extensive Kentucky timber lands, closed a contract with Stang Bros. to furnish a part of the timber to be used on the job.

Very handsome invitation cards are issued by the Cleveland Lodge No. 4 of the Shipmasters' Association to their annual reception and ball to be held at the Army and Navy hall Wednesday, February 17. All members of the order are licensed shipmasters and the various committees are composed as follows:

Committee of Arrangements.—Capts. Frank Stenton, Clint. G. Ennes, A. J. Greenley, Richard Neville and John Ward.

Reception Committee.—Capts. John Lowe, J. A. Holmes, Geo. P. McKay, John Mitchell, James Stone, Frank Rae, George Mallory, Thos. Wilford, C. H. Woodford, Thos. Jones, Wm. Cummings, Wm. Patterson, John W. Moore, Henry Stone, Robert Cowley, W. W. Brown, Ralph Byrns, C. C. Allen, R. Jollie, Allen Flick.

Supper Committee.—Capts. James Stone, Thos. Jones, John McNeff, W. J. Hunt, John Smith, W. E. Morris, John Ward, Olef Oleson.

Floor Directors.—Capts. R. Neville and R. C. Pringle.

Floor Managers.—Capts, Claud M. Ennes, Wm. P. Benham, Robt. McDowell, Henry Peterson, J. LaFromboise, Ralph Lyons, Chas. H. Wallace, Frank Rae, Chas. Hutchinson, James Lowe, Rudolph Walder, James Lawless.

Decorating Committee.—Capts. Bryan Gray, E. Reimer, Hiram Eldridge, E. T. Rattery.

Sergeant-at-Arms.—Capts. Chas. Hinslea, W. H. Singer, Dan Mallory, Al. Chapman and Carleton Graves.

CHICAGO.

Special Correspondence to The Marine Record.

J. J. Rardon & Co. chartered the barges Ashland and Scotia for corn to Kingston at 4 cents, free of tolls.

At Miller Brothers' Shipyard the steamer A. C. Van Raalte is in dock to receive considerable repair, re-calking and re-ironing.

There is no tendency to a raise in grain freights and many owners of vessels are holding back from chartering, in hopes of a possible rise.

The steamers City of Duluth and Jay Gould which had been lying in port all last week, awaiting less severe and better weather, left here for St. Joseph, Saturday night.

The many friends of Capt. James A. Calbick will feel very sorry to know that the worthy captain has been seriously ill with pneumonia during the past two weeks. I wish him a speedy recovery, and all his friends are with me.

All Chicago marine men who wish to enjoy a pleasant evening should not fail to attend No. 4 Marine Engineers' Beneficial Association, reception and ball at the Masonic Temple on Wednesday evening, February 10.

The Independent Fuel Co. have engaged the services of Capt. Charles Wallace as sales agent for the coming season. Captain Wallace formerly commanded the steamer George Presley and is favorably known in marine circles. I wish him good luck in his new position.

Capt. John Prundiville chartered the barge Churchill for 70,000 bushels of corn to Kingston at 4c. the steamer Cadillac for 70,000 bushels of corn at an option of 2¾c, to Buffalo, or 4 cents to Kingston, the schooner Emily B. Maxwell for corn to Port Huron at 2½ cents.

The announcement of the death of Capt. Hugh McMillan has caused quite a consternation here and the deepest regret is felt at his sudden taking away. He was beloved, respected and esteemed by everybody as an honest, true man and in his business capacity as an agent he was unequalled. When visiting around the agents' offices today I found all more or less affected by the sad news, and they regard his death as almost a calamity.

Capt. John J. Keith has made arrangements to have the fast passenger excursion whaleback steamer Christopher Columbus here again next season to run between Chicago and Milwaukee and perhaps other ports. The Columbus will be put in excellent condition for next season's work. I understand she will be unsurpassed for accommodation, convenience and speed.

The steamer A. C. Van Raalte, Capt. Ross C. Smith, had a rather rough experience in the ice Monday night. The trip from the 68 street crib is usually run in about 40 minutes, but it took nearly 14 hours to make her last trip through the ice, she having left the 68th street crib at about 5:20 Monday evening, and reached Chicago harbor at 7 Tuesday morning. From December 1 to February 1, both inclusive, the Van Raalte missed but one day in making one or more trips to the 68th street crib with materials, supplies, etc. Capt. Ross Smith is an old veteran and is one of the oldest and most thoroughly experienced masters on the lakes. He says he did not fear any trouble on the trip so long as the coal pile lasted, which it fortunately did, although it was nearly all used up on her arrival.

BUFFALO.

Special Correspondence to The Marine Record.

The steamer Onoko, which is wintering at this port, has now completed fifteen seasons and carried the broom for cargo capacity for ten of them. She has had business in ore at $3 and wheat from Port Arthur at 14 cents, and has been more than an ordinarily lucky craft. The insurance companies have no cause to think ill of her. The worst thing she ever did was to take the life of Capt. Trinter, who sailed her so long. He used to say that she could make money on grain at 1 cent and coal back at 50 cents. However, she can not do it today with 5,000-ton steamers to buck against her.

Two settlements in collision cases have been made at Buffalo within the past few days. The collision between the steamer Alva and McDougall pig 117, which took place in St. Mary's River in 1895, has been arranged as follows: As both vessels were injured and it was found that both contributed to the accident, it was agreed that the pig shall pay the Alva on a basis of 70 per cent of the Alva's loss, which was about $14,000. In the Jack-Norman collision case, in which the Norman was sunk in deep water and the Jack waterlogged in Thunder Bay during the season of 1895, it was agreed that the Jack shall pay the Norman the amount of her (the Jack's) valuation after she had been brought into port and docked—$8,000.

According to those looking into the matter, there is any amount of rumor, added to some positive half statements, in regard to changes in prospect in marine insurance for next season. Nothing is more certain than that there is to be a radical change of front. The fight is between Chicago and Buffalo, with a positive assertion that there is to be strength enough thrown in here to beat the Chicago combination if ocean assistance has to be asked to lessen the supremacy of some local firms. It is anybody's fight yet, and the worst of it is that the most direct sources of information are shut off by the chances that are being taken on the quiet. And if I understand aright there is any amount of underground work being carried on. This port will at least hold its own in any event.

Mechanical experts employed by the Board of Public Works to test the new 30,000,000-gallon pumping engine built by the Lake Erie Engineering Works, of this city, have turned in their official report. The experts found that the engine more than meets the requirements called for in the specifications, and is even ahead of the guarantee made by the company. The tests credit the engine with a duty of 152,041,106 foot pounds for each 1,000 pounds of steam. The specifications called for an engine which should be capable of a duty of 130,000,000 foot pounds. The company guaranteed to furnish an engine which would give a duty of 140,000,000 foot pounds, and for every million foot pounds or fraction thereof below that standard which the engine failed to give, it was to forfeit $1,000.

PORT HURON.

Special Correspondence to The Marine Record.

Work is rushing on the new boat at the Jenk's Shipbuiulding Co. yard.

St. Clair River is blocked with ice up to Dunford and Alverson's new dry dock.

Capt. Criss Smith is spending the winter in Milwaukee, looking after the repairs in the steamer Doty.

Nothing is known for sure what will be done next season with the steamer Unique. She still lies in Sarnia.

The Life Saving Station is now a sure thing. It is expected that it will be ready by the opening of navigation, 1897.

The steamer Mary is laid up for the present. She will be entirely overhauled and repainted. Will come out as fine as they make them.

Capt. Patrick Ryan, the veteran bridge tender, is suffering from 14 boils on his neck. The old gentleman says Job never suffered such torment as he is at present undergoing.

Harvey Tappan has prepared a memorial to Congress for Jas. Livingston & Co., setting forth the necessity for a protective tariff on flax and its products. Congressman Snover is giving the matter special attention before the committee on ways and means.

The American Cordage Co., of New York, will open a supply depot in this city. D. Robeson will have charge of the business of the company for eastern Michigan. A large warehouse will be built in the First ward for the accommodation of the business.

Sam Yax, of Fair Haven, has been confined in the county jail of Mt. Clemens for several days past on a charge of illegal fishing. Yax has a wife and family living on the lake shore, who were left in an unfortunate position, the cold weather of the past few days causing them to suffer for food and fuel. There has been considerable feeling in the community over the arrest of these fishermen, whose only means of livelihood has been the few fish caught through the ice near their homes on the lake shore. On Tuesday Judge Spier paid the man's fine, and he started to walk home, a distance of twelve miles, having no money to reach his destination in any other way.

MILWAUKEE.

Special Correspondence to The Marine Record.

The steamer F. & P. M. No. 4 took out 20,000 bushels of barley on her last trip.

Slush ice detained the Grand Haven liner Wisconsin on the east shore one day. She arrived here in company with the Nyack.

The stationary dry dock at the west yard is occupied by steamer F. & P. M. No. 3. She is receiving a new outboard shaft and sternpipe. On examination her shafting proved to be out of line fully an inch, and this has necessitated reboring for the sternpipe.

E. A. Cannon, of Milwaukee, superintendent of United States dredges, reached Green Bay with a crew of ten men and commenced to take soundings in Green Bay, north of Fox River to Point Sauble, about three miles out, to

see if any changes have taken place in the channel the past season that might necessitate redredging. Weather permitting, Mr. Cannon expects to have the work completed in about ten days, after which he will go to Menominee to take soundings in the harbor at that place.

The Wisconsin erred in giving the days of departure of the Hurson line steamer until daily service is resumed. She will leave Milwaukee on Tuesdays, Thursdays and Saturdays, and Chicago on Mondays, Wednesdays and Fridays—just the reverse of the order as announced last week.

Charles Boehme and William Long brought suit this week against Albert Williamson and Ole Halverson to recover $1600 alleged to be due for the purchase of the schooner Dawn. The owner asserts that after the payment of $200 the defendants discovered that the schooner was unseaworthy and rescinded the contract.

The snow storms and cold weather of the past week have caused the formation of considerable slush ice along the east shore of Lake Michigan, which threatens more or less trouble to the line steamers in the near future unless easterly winds set in and scatter it. Off St. Joseph the icepack extends upwards of three miles from shore and is constantly augmenting in area. At Muskegon and Grand Haven the slush ice is packed deeply between the harbor piers, but steamers have thus far been able to force their way through the barriers. At Ludington the situation is as yet not by any means threatening.

DETROIT.

Special Correspondence to The Marine Record.

The Whitney and Merida Transportation Co. re-elected directors as follows: D. Whitney, Jr., Charles Stinchfield, John Dalzell, R. Cuson and D. C. Whitney. Merida—D. Whitney, Jr., C. Stinchfield, R. Cuson, J. A. Remick and D. C. Whitney. Officers of the two companies were re-elected last year. Whitney—D. Whitney, Jr., president and treasurer; John Dalzell, vice president; D. C. Whitney, secretary and manager. Merida—D. Whitney, Jr., president and treasurer; C. Stinchfield, vice president; D. C. Whitney, secretary and manager.

There was to have been a meeting of the lake carriers and vessel owners at the offices of Parker & Millen, Wednesday morning, to take action upon the death of Hugh MacMillan, of Chicago. Capt. Millen requests that not only the members of the Lake Carriers' Association, but all vessel owners who can, will attend the meeting. Many expressions of grief are to be heard among vessel men, brought out by the unexpected news of the death of Hugh MacMillan. Gibson L. Douglass, the general manager of the Western Transit company, in a letter to William Livingstone among other things says: "As to the loss to this company I say I do not think there is a man living who can fill Mr. MacMillan's shoes in every particular."

The Michigan Insurance Commissioner has prepared a statement showing the state insurance business for the year ending Dec. 31, 1896, of 125 stock and four mutual companies doing a fire and marine business in the state. The total fire risks written during the year amounted to $284,158,820, and of inland marine risks, $11,491,994, there being a falling off of over $5,000,000 from the previous year in the amount of fire risks and of nearly $4,000,000 in the inland marine risks. The premiums received during the year 1896 were on fire risks, $4,262,872, and on inland marine, $166,404. The losses for the year in the state were: Fire, $2,921,898, and inland marine, $162,385. These figures indicate that the inland marine insurance companies had a very large year, the premiums received being barely sufficient to pay the losses. While, on the aggregate, the fire companies did a fair business, individual companies lost heavily on Michigan business. The Michigan stock companies, of which there are four, the Detroit Fire and Marine, the Grand Rapids Fire, the Michigan Fire and Marine, and the Saginaw Valley have done a good business . The fire risks written by them were $23,186,244 and the inland marine $1,802,857. The premiums received on fire risks were $303,260 and on inland marine $26,321. The fire losses were $139,459, and the marine losses $11,412.

FLOTSAM, JETSAM AND LAGAN.

Little Traverse Bay is completely frozen over.

Lake Shipmasters want masters of sailing vessels licensed.

The steamer Emily P. Weed will hereafter carry two instead of four-pole spars.

The Delta Lumber Co., of Detroit, is getting out 8,000,000 feet of timber for government work.

The ice on Green Bay between Menominee and Sturgeon Bay now averages 12 inches in thickness.

The new steel steamer Empire City is to have compound independent boiler feed pumps and compound indepeendent air pumps.

Capt. Charles Thompson has been transferred from Capt. John Cochrane has taken Capt. Thompson's place steamer F. & P. M. No. 2 to steamer F. & P. M. No. 3. on the No. 2.

The Wisconsin Central Railway Co. wants Manitowoc to do about $70,000 worth of dredging next summer, as it is proposed by the company to do a large amount of additional docking.

The overhaul of the Goodrich line sidewheel steamer Sheboygan, now in Burger & Burger's stationary dry dock at Manitowoc, will consist of a thorough rebuild. She is to receive new frames where needed, new keelsons, main deckbeams and deck, arches, bed timbers for engine, entire new ceiling, outside plank from light waterline up, and thorough recalking throughout. The work outlined will make the hull of the steamer practically new.

Pres. Crapo, of the Flint & Pere Marquette road, denies that the road has given Wheeler, of West Bay City, a contract for a duplicate of a big car ferry to go into commission between Ludington and Manitowoc. When asked about the future he does not deny that at some time it may be found necessary, owing to increase in business, to build another ferry; but not just at present. This effectually settles the report noised around so much a few days ago and chiefly emanating from Michigan ports.

Capt. William Smith, for two seasons past in command of the steamer Raleigh, will the coming season command the steamer George W. Roby. Capt. A. R. Bell, last season mate of the steamer Arundell, has been appointed master of the steamer Jim Sheriffs. Capt. W. W. Stewart, last season master of the steamer Samoa, will command the steamer Ionia. Capt. Eugene Rathbun, of Algonac, who acted as sailing master of the steamer Santa Maria the past two seasons, has purchased one-fourth of the steamer Tempest No. 2 at the rate of $15,000 for the whole. Capt. Rathbun will sail and manage her himself.

The underwriters have settled the fire loss on the steamer Queen af the West for $450. Nothing has been done with the wet grain found on board of her at Ogdensburg, mainly on account of the severe weather. The wet barley in the cargo of the Topeka at Oswego was sold for $80. When it was taken out the craft was so light at one end that the rest of the cargo had to be reloaded to prevent straining the hull. The same was the case with the Hallaran at Ogdensburg after 1100 bushels of wet grain was discharged.

Vesselmen who confine their operations to the lumber trade at Tonowanda and Buffalo are beginning to feel anxious over the situation, especially on account of stories of a prospective falling off of shipments by lake next season by reason of both light sales this winter and a decrease in the output. One firm at Buffalo has bought about 4,000,000 feet on Lake Superior, but so far as can be learned, no one else has taken any contracts for next season's lumber. Even Holland, Graves & Montgomery have not bought their usual block at Marinette, and intimate that they may not take it at all.

Congressman Southard, of Toledo, visited the lighthouse board a day or two ago and found upon inquiry that the report sent out last week that the board had recommended the construction of a lighthouse at Toledo harbor was erroneous. On the contrary the board did not even hold a meeting last week and had it done so, would not have taken the action stated, as it has called on Col. Jared A. Smith, Corps of Engineers, U. S. A., for information on this subject, which it must have before action can be had. "I hope that the board will take this action," said Mr. Southard, "but it certainly has not done so yet, and if it does make the recommendations, of course there will be no action upon it by this Congress at this late day in its existence."

MARINE ENGINEERS' BENEFICIAL ASSOCIATION.

At the annual convention of the Marine Engineers' Beneficial Association, W. Blanchard, of Detroit, submitted the following motion which was immediately adopted:

Whereas, It has come to the knowledge of members of the Lake Association that certain parties are endeavoring to prevent an appropriation that has been allowed for several years past for maintainig a marine postal service on the Detroit River, and as such interference with the present postal service will prove a severe loss to all marine engineers, and especially those on the great lakes; therefore, be it

Resolved, That it is the sense of this national convention that a committee be appointed to meet with the Congressmen having said matter in hand, and that a petition be presented from this body urging the continuance of postal service by the Postoffice Department as heretofore, and that said committee confer with the Vessel Masters Association and request their co-operation in the furtherance of this matter.

The delegates representing No. 33, New York, presented the following bill, as amended, introduced by Mr. Mallory on September 6, 1894, and respectfully urged that the National Association use every means to have it made law:

"A BILL

"To require steam vessels of the United States, of 1,000 tons or more, to have one engineer and helper on watch in their enginee rooms while under way, and to require all steam vessels of the United States, continuously under steam for more than ten hours, to carry two licensed engineers.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That every steam vessel of the United States, 1,000 tons or more, shall at all times, while under way, have one engineer and one helper or oiler on watch in the engine room, and every steam vessel of the United States that is under steam continuously for more than eight hours shall carry two licensed engineers; provided that this bill shall not apply to steamers whose regular service or duty does not exceed ten hours per day."

CHICAGO WATERWAY.

During the 40th assembly of the Illinois senate the following act was introduced by Mr. Bogardus:

Be it enacted by the people of the state of Illinois, represented in the general assembly, That it is hereby declared to be the policy of the state of Ilinois to procure, as soon as practicable, the construction of a trunk waterway through the state from Lake Michigan via. the Desplaines and Illinois rivers, to the Mississippi river, of such dimensions and capacity as to form a homogeneous part of a through route from the Atlantic seaboard via. the great lakes to the Gulf of Mexico; and it is hereby declared to be the further policy of said state to determine such a system of lateral and subsidiary waterways as shall be permitted by topographical and hydrographical conditions, in order that the state may, by appropriate legislation, fully conserve the public interests in said system, to the end that the same may be developed with the growth in resources and population, and as public necessities shall demand. And in furtherance of the policy herein set forth, the governor is authorized to appoint, by and with the advice and consent of the senate, a commissioner of waterways, who shall be a civil engineer of recognized standing and ability on waterway questions; said commisioner to report to the next general assembly of Illinois such data and conclusions, with estimates, diagrams and maps in illustration thereof as may be germane to the subject, and said report shall be accompanied by recommendations in regard to the means to be employed in carrying out any project that may be matured, and the draft of any legislation that may be desirable.

Sec. 2. In projecting said trunk waterway, the commissioner shall consider the sanitary and ship canal of Chicago, and the connection of the same with Lake Michigan in relation to its uses as a harbor for lake shipping; also for ocean vessels, in accordance with such plans for connecting the lakes with the Atlantic as may be projected by the commissioners of the United States. And from said sanitary and ship canal of Chicago to the Mississippi river said trunk waterway shall be projected of such capacity as will accommodate boats of a draft not less than fourteen feet, and be adequate to the largest Mississippi steamboats and to a fleet or tow of barges carrying not less than ten thousand net tons of freight; and said project shall be so designed as to permit future increase of depth whenever warranted by the demands of traffic and the public resources; and said project shall be considered in relation to the navigable stages of the Mississippi, the improvements now under way and the possible future development.

Said commissioner is authorized to procure all necessary data, documents, reports, maps and charts, and, to that end, he shall have access to any such material collected or prepared by any sanitary district, and may take copies thereof, and is authorized to call upon any public officer or any corporation organized under the laws of this state, for any information relative to the subject matter of this act that he may require, it being the intent to collect and utilize existing information, as far as the same may be available, for the purpose of this investigation; and he may promote projects consistent with the purposes of this act by attending waterway conventions and congresses, by co-operating with commissioners and officials charged with similar objects in other states, by the exchange of pertinent information, by the publication and distribution of statistical and other information of current interest, and by exhibits of diagrams and maps, and said commissioner is authorized to receive contributions of assistance and moneys from individuals and public bodies and to apply the same in his discretion and as he may be authorized by the party or parties contributing the same.

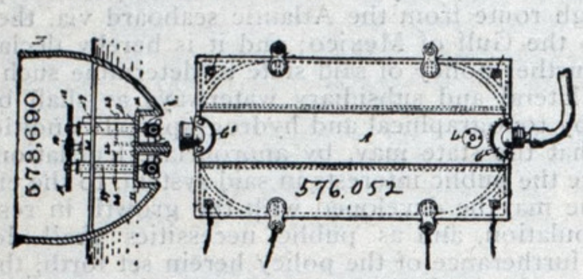
For the purpose of carrying out the intent of this act; there is hereby appropriated from any moneys not otherwise appropriated, the sum of thirty-five thousand dollars ($35,000), or so much thereof as may be necessary, the same to be disbursed by the commissioner of waterways, in the employment of assistants, procuring data, publication of reports and in traveling and other necessary expenses, of which a detailed account shall be returned on vouchers subject to the approval of the Governor; Provided, that said commissioner shall be entitled to receive as compensation to be paid out of the sum above appropriated for his services, the sum of five hundred dollars ($500), per month for twenty-two months, beginning July 1, 1897. The commissioner of waterways shall have his office in the city of Chicago, or at such other point as will best suit the convenience of his work, and in his absence he may depute some suitable person to act for him. He shall make a quarterly report to the Governor, briefly setting forth the work in progress and an exhibit of expenditures therefor, and he may append to said report a statement of work done and expenditures incurred and paid through assistance and contributions from sources other than those provided in this act, and he shall file copies of all matter issued or published in the progress of investigation.

The final report of the commissioner of waterways shall be submitted to the General Assembly through the Governor, on or before March 1, 1899.

The Superior Iron Works, of West Superior, Wis., which were built and will be operated by Hiram Hayes & Son, are now ready for business. Being near the barge works and dry dock they expect to do a large business in boat repairing this coming season. The plant is thoroughly equipped with all the latest machinery and is a fine addition to Superior's industries.

MARINE PATENTS.

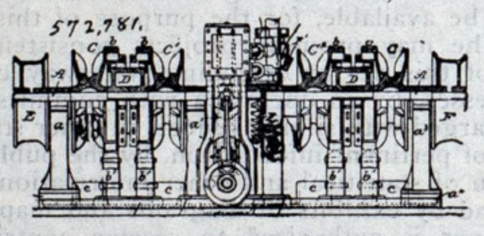
No. 573,690—Vessel. Conrad Odinet, New York. Claim.—In the construction of the hulls of vessels, a housing erected longitudinally in the central portion of the hull, forming a depression in the said bottom of substantially rectangular shape in cross-section, a keel laid centrally along the under face of the housing and extending from bow to stern, dividing the depression into two longitud-



inal channels, said keel projecting below the horizontal line of the hull, gates located in each channel, operated from the interior of the hull, propeller-shafts journaled in each channel, extending substantially the length of the same, propeller secured to the shafts, vertical shafts geared with the propeller shafts, and a power-shaft geared with the said vertical shafts.

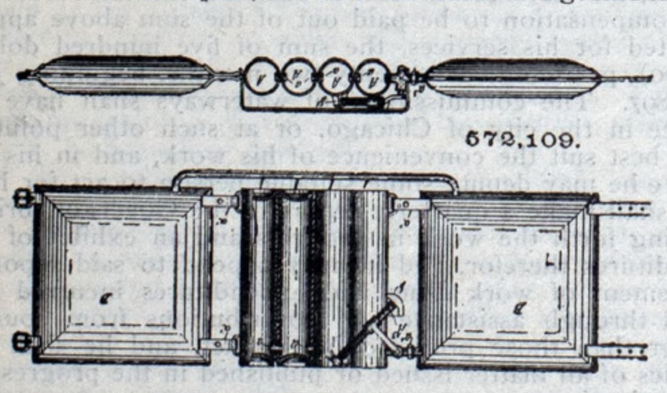
No. 576,052—Raising Sunken Vessels. John R. Grant, New York, N. Y.—Claim.—A bag for raising sunken vessels, said bag having an inlet-orifice internally threaded and an inlet-tube, the same having its inner end perforated and having near its outer end an enlarged and externally-threaded portion fitting within the inlet-orifice whereby the tube is secured in place. A bag for raising sunken vessels, the bag being composed of an inner and outer shell of fabric and the bag having an orifice, two reinforce-plates respectively secured to the inner and outer sides of the bag and having orifices matching with the orifice in the bag, a rubber gasket for each reinforce-plate, the gaskets being respectively interposed between the plates and the adjacent shells, means for pressing the reinforce-plates toward each other, and a boss formed on the outer reinforce-plate and surrounding the opening therein, substantially as described.

No. 572,781—Ship's Windlass. Edwin H. Whitney, East Providence, R. I., assignor to the American Ship Windlass Co., Providence, R. I.—Claim.—The combination with a ship-windlass, having on its shaft appropriate wildcats, lacking-gear driving-heads, and a worm-gear with its driving-head, of a pair of inverted vertical engines, mounted on a bed-plate common to the windlass, and a combined



worm-shaft and crank-shaft, mounted in bearings closely adjacent to the surface of the bed-plate, the worm on said shaft being beneath the worm-gear, and the cranks being beneath the engines, the bed-plate being recessed for affording crank-pits for the engines.

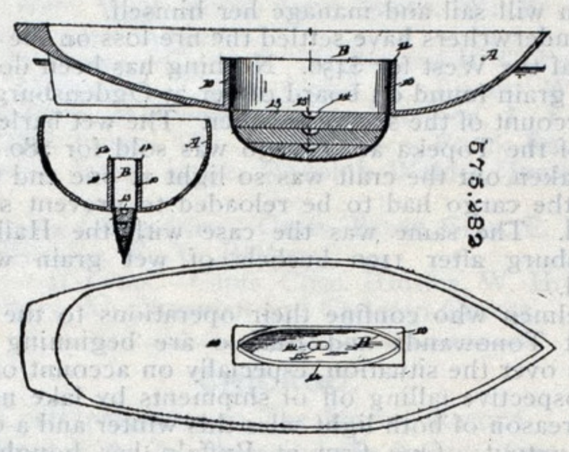
No. 572,109—Life-Preserver. Thomas Gordon, New York, N. Y.—Claim.—In a life-preserve, the combination with an inflatable part, of a chamber for containing compressed air or gas, a communication between said chamber and inflatable part, a valve for controlling said com-



munication, and a material soluble in water, for holding said valve in a closed position, a spring for operating said valve, and a part soluble in water for holding said spring in an operative position, a lever extending from valve, a spring in contact with lever, and a part or element soluble in water for holding said lever and spring in an operative position, and for holding said material until it shall have been dissolved or weakened sufficiently to break.

No. 575,093—Automatic Electric Marine Sounding Apparatus. James F. Babcock, Bangor, Me., assignor of one-half to Flavius O. Beal.—Claim.—An automatic electric marine-sounding apparatus consisting of the combination of a cylinder having a water-tight chamber; a movable rod partially within said cylinder, working longitudinally therein, and having an insulated metallic cap upon its head and within said chamber; a staionary insulated metallic cap within said chamber and in line with said cap on said movable rod; a spring within said cylinder acting against the downward movement of said movable rod; a weight attached to the lower end of said movable rod sufficiently heavy to overbalance said spring; an electric battery, and two wires properly insulated connecting the poles of said battery with said insulated metallic caps.

No. 575,232—Sailing Vessel. Ranald Gillis Sydney, Canada.—Claim.—A marine vessel, having a trunk rising from an opening in its bottom, a keel removably held within the trunk, the keel consisting in a shell and projecting



through the opening and below the vessel, and a plurality of removable weights superposed in the shell and conforming to the shape thereof, and a series of weights elongated with the keel and removably seated within the keel, the weights being superposed on each other, and each weight snugly engaging the sides of the keel, substantially as described.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS.

Treasury Department.
Office of the Lighthouse Board,
Washington, D. C., January 29, 1897.

ASHTABULA RANGE REAR LIGHT STATION.

Notice is hereby given that, on the opening of navigation, 1897, two fixed lens lantern lights (instead of three lights, as heretofore), one while vertically above one red, will be established in the structure recently erected near the shore line, west of and adjoining the inner end of the west pier, entrance to Ashtabula Harbor, and 1,287 feet S. 0° 25′ W., true, in rear of the front light of the range. The new structure replaces the temporary structure erected in November, 1895.

The focal planes of the lights will be, resepctively, 62 feet and 68 feet above mean lake level.

The structure is a square, red, pyramidal, inclosed tower, surmounted by an octagonal lantern with a copper roof.

By order of the Light-House Board:

JOHN G. WALKER,
Rear Admiral, U. S. Navy, Chairman.

JUDGMENT AFFIRMED.

The Supreme Court of Illinois has affirmed the judgments of the Appellate and Circuit courts of Cook county in the case of the Sturgeon Bay and Lake Michigan Canal and Harbor Co. against Leathem & Smith, of Sturgeon Bay. The canal company sued Leathem & Smith to recover toll charges on tugs in the sum of $3,044.67, and on vessels of $415.96—making in all $3,460.63. The lower courts disallowed the toll charges on tugs, but held that the vessel tolls were valid, and rendered judgment for the $415.96 claimed in the latter connection. The Supreme Court decision puts an end to the litigation and gives Leathem & Smith a substantial victory.

MARINE ENGINEERS' BENEFICIAL ASSOCIATION, NO. 44,

The list of officers elected by the M. E. B. A., No. 44, Manistee, Mich., is as follows: President, Wm. R. Patterson; vice president, H. F. Otto; treasurer, Richard Winkler; recording secretary, Roy March; financial secretary, F. Winkel; corresponding secretary, Chris Dahl; chaplain, Henry Hall; conductor, Frank MacMillen; doorkeeper, Adolph Winkel.

AT WHEELER'S SHIPYARD.

Preparations are being made at Wheeler & Co.'s shipyard at West Bay City for laying the keel for a steel screw steamer which the company will build for J. L. Crosthwaite, Buffalo; D. O. Mills, N. Y., and Lewis A. Hall, Bay Mills, Mich. Two of the owners are interested in the Niagara Falls Paper Co., and the steamer will be used largely in its interests on Lake Erie.

One of the features of the new craft will be the hull construction. She will have a double bottom for water ballast fore and aft and the outer bottom will be sheathed with oak timbers to the upper turn of the bilge. This construction is employed to render the bottom stronger and less susceptible to any groundings which she may receive. The boat will have masts of steel similar to those to be used on ship No. 120 at the yard. It is believed by ship builders that the steel spars will in time entirely supplant the wooden ones now in vogue, as they are much stronger and lighter. The material for the steamer is arriving in large quantities and the keel will be laid as soon as possible. The boat will be known as No. 121 at the yard and will be built directly in front of the machine shops. The dimensions of the new steamer will be 281 feet over all, 266 feet between perpendiculars, 42 feet molded beam and 19 feet molded depth. She will have a carrying capacity of 2,500 net tons on a mean draft of 12 feet 10 inches.

The steamer will be single decked with bulwarks 4 feet high all fore and aft. She will have a top gallant forecastle for the accommodation of the crew, with a captain's room and pilot house over same. Accommodations for officers and the saloon will be aft. The plates to be used in the construction of the steamer will be of the best open-hearth mild steel, with a limit of tensile strength of 54,000 to 62,000 pounds per square inch. All material will be tested at the steel works by competent inspectors and none but the best will be used in the construction. The engine will be of the triple expansion vertical type with cylinders 17 inches-29 inches-48 inches by 36-inch. stroke. She will have a complete outfit of the latest improved pumping apparatus of the Dean Bros. type. The power will be furnished by two Scotch type marine boilers of 11 feet in diameter by 12 feet in length, for a working pressure of 170 pounds per square inch. Each boiler will have two Adamson furnaces 42 inches in diameter. Also a complete electric outfit consisting of 200 16-candle power lights. She will be equipped with the latest steam windlasses and capstans of the American Ship Windless Co. make. The anchors will be of the Vulcan stockless pattern, weighing 2,500 pounds each. The ship will be supplied with all the latest improved labor saving devices for handling cargoes.

The work at the yard will be under the inspection of Robert Logan, of Cleveland, for the owners and classification society, where she will be rated, and the most careful attention will be given to details and quality which has characterized all of the ships which Wheeler & Co. have turned out.

GULF OF ST. LAWRENCE SURVEY.

A comprehensive survey of the tides and currents of the Gulf and Atlantic Coast of the Dominion is now being prosecuted by the Department of Marine and Fisheries. Tide gauges are in operation at seven main stations: Quebec, Father Point, Southwest Point of Anticosti, Forteau Bay, St. Paul Island, Halifax, and St. John, N. B., and when sufficient records have been obtained and reduced, these main stations will be used as bases of comparison for other places in their respective neighborhoods.

A NEW INDUSTRY.

Edwin S. Cramp, of the firm of Philadelphia shipbuilders, has concluded arrangements for opening a factory in Rockport, Ill., for the manufacture of cellulose from cornstalks. The enterprise has grown out of an invention by a young Philadelphian named Mark W. Marsden, who discovered that a portion of the corn-stalk could be converted into the best material for cellulose. He sold the process to the Cramps, and it is their purpose to go into the business on an extensive scale. "Our experiments with this new cofferdam material," said Mr. Cramp, "have shown that it is the most perfect in its action of anything of the kind ever used. The factory we are about to open at Rockford is only one of the group of factories that we intend to open throughout the West before another autumn."

CORRESPONDENCE.

ERROR IN NEW CHART.

Chicago, Feb. 3, 1897.

Editor Marine Record.

Permit to call attention to an error in the range for the upper cut in Hay Lake channel, St. Mary's River, chart no. 1436. U. S. H. O. The range is stated to be N. 21° W., while the drawing shows about one-half point difference.

This difference is easily detected by comparison with Little Rapids Range close by; being also N. 21° W., both ranges should be parallel in the chart, which they are not.

As vessels are apt to use any range for ascertaining compass errors, the error in the chart might produce serious consequences. JAMES MAURICE.

BURNING OF THE STEAMER W. R. GRIFFITH.

Sombra, Ont., Feb. 2, 1897.

To the Editor of The Marine Record.

Perhaps one of the greatest holocausts which has occurred on the great lakes, is that of the steamer W. R. Griffith off Chagrin in 1850. In this connection no less than 250 lives were lost.

Your correspondent left loaded with flour and wheat the evening before the ship went down. The wind was light and baffling from the Northeast. Next morning while in charge of the boat, I sighted some smoke ahead, called the watch out, and took in all light canvas. Having two large boats, one of which was consigned to Buffalo as part cargo, I pulled after the burning steamer. When near enough to hail, I asked her to slow down so that if they were in imminent danger, our schooner might rescue them, but she went ahead at full speed towards the beach.

A large number of passengers on board hailed us to come to their rescue, we tacked ship and stood after them although the wind was increasing to a moderate gale and the schooner standing close after her. The steamer struck the outer bar and swung round head out to the lake. When our schooner got within four fathom range of soundings the anchor was dropped and four men and myself put off in another boat to rescue the people in distress, but when we reached the burning steamer, we found that we were somewhat too late to rescue the helpless passengers, although there were a few who got ashore by floating on pieces of wreckage, while a great many others were found in five feet of water locked in a close embrace.

When we got alongside, the ladies' cabin below was not burning, and I sent two of my men in through the stern windows to see if there were any women or children there. They found none, but threw pillows in the small boat, and this was all I could do for the burning steamer, her passengers and crew. They signalled me from the shore to bring all the bodies I could ashore, and I replied that I came to save the living not to pick up the dead. Up to this time the wind had been increasing and there was a very heavy sea running, so that to save my ship, freight and cargo I was compelled to get up anchor and stand off shore.

Now, as an old seaman, lake-faring man and nonagenarian, I would like to say that I have never seen so sickening a sight in all my career as was met with there. The ladies had dressed themselves, in hopes of meeting their friends in Cleveland and this catastrophe was perhaps more than human endurance had ever been called upon to meet, at least up to that time it was so in my experience. The captain lost his life, also his wife, two daughters, and his wife's mother.

In looking back over a period of nearly half a century I now conclude that the captain of the steamer wanted brains. If he had slowed down his steamer and lowered his small boats we could have saved all of the passengers, we could also have maintained order and discipline on board so that things would have gone all right.

There were some passengers on board named Lacy and this may give a clue to others who have been lost without any record being made of their loss. I did, however, see one man on shore from the wreck who had a gold watch guard one-eighth inch thick around his neck, but it was broken, and in answer to my inquiries he said that his dear little boy clung to it until he felt himself drowning, and he then was base enough to throw the poor little boy away, shook him off as it were, and let the boy drown. The $200 watch which he wore was of course lost, but even at this distance of time I think the fellow was a coward. Luckily, or unluckily, the captain was insured for $10,000. After the casualty this amount was paid to his brother. For my part we gave the pillows that we had saved to the owners in Buffalo, on our arrival there. Capt. Dick Stringham had been master of the steamer previously, but on her being sold, a new master was appointed, and as I have said before, there was a lack of brains there. However, I do not wish to see such a sight again, and I want to tell you, also the readers of The Marine Record, that myself and entire crew forgot to eat our breakfast that morning as we felt so sorrowful after seeing so many of our fellow creatures "passing over the river." I remain yours very truly, CAPT. CHAS. GALE.

A CORRECTION.

Chicago, Ill., Jan. 27, 1897.

Editor Marine Record.

In your issue of December 24th last, page 9, under the heading "Lake Marine Insurance," you give the opinion, as to next year's rates, of Mr. A. H. McDonell, of the "Detroit Fire & Marine Insurance Co." As you give the name as C. A. McDonald, it has lead to considerable confusion, as, at first glance, many have thought you intended to quote the senior member of our firm. If it is true that this is the view of Mr. A. H. McDonell, of Detroit, will you kindly correct the name in your next issue, and oblige, C. A. MACDONALD & CO.

ONE FROM LAKE ONTARIO.

The Oswego Palladium announces the death in that city of Capt. G. N. Spencer. Capt. Spencer was well known on the lakes, having at one time commanded one of the Northern line steamers and also large lake and river tugs, among them the Winslow. During the past six years the deceased has been in command of yachts in the St. Lawrence River and about the Thousand Islands. He is survived by a widow and several children.

VIEWS OF THE WHALEBACK BUILDER

In a lengthy article sent out from Duluth last week and published in the Chicago as well as other daily papers, Capt. Alex. McDougall, the well-known builder of the whaleback type of vessel, speaks of the great handicaps which are now experienced by owners of American vessels and he compares the great growth of British shipbuilding with the decay of the American merchant marine.

Capt. McDougall says that to build a good merchant ship for eocean trade in the United States at the present time will cost about one-half more than in Great Britain. Thus, a steamship that would cost $300,000 in the United States would cost but $200,000 in Great Britain, so that for the life of that ship there would be $15,000 yearly in favor of the British ship, as follows:

Insurance, 6½ per cent; interest, 4½ per cent; depreciation, 4 per cent, on the $100,000 difference in first cost. Then would come the difference in operating expenses, crew, shore management, insurance, foreign agency and exchange, all of which we are not well skilled in its manipulation, which would amount to nearly as much as the difference in first cost; all of which does at first look very discouraging to us, but a plan suggested later on may help us to overcome part or all of this great difference.

Different shipping bills have been introduced in Congress in the last ten years, but some or most of them have been loaded with frills and requirements of classification societies, speed, etc., all of which would afterward usually take care of itself, if the proper assistance was at first given by our government to help us introduce our own skill at sea and to the world, and I think it can be done, and at the same time maintain higher wages than paid in any other country, both on manufacturing and shipping. More than $200,000,000 is paid to foreigners yearly to do our shipping. If we could only do one-half of this, what a commencement it would be to the greatness which this country will some day reach. I think we have more iron ore and coal than all Europe, and of a good quality, opened up and developed, and right in amongst where the greatest part of our population lives, and can cheaply be brought to our coast. And doubtless we have the skill to manufacture it into the various requirements for home and foreign trade, or to build ships from, and if we are in this position we must do something to give employment to that multitude of intelligent men who are idle in this country.

The difference between the cost of building, owning and operating an ocean-going ship of today of the United States and that of some of the European countries is about equal to one and one-half cents per ton per 100 miles carried at sea, so that if our government could give a county of two cents per ton per 100 miles an American ship would carry a ton of freight from the United States to any foreign country, or that would carry a ton of freight from any foreign country to the United States, to be paid as follows: From the treasury of the United States by reports made to or obtained from customs officers at ports in the United States, and by reports to or from United States Consuls in foreign ports, taken from the ship's manifest, and by Washington time, exact hour and date, which would be forwarded to the Treasury Department, to be filed in the order of time the voyage might be finished, so that in case there has not enough been appropriated, the most all other classes of business there is a fair chance it first in and on record will earn the premium, and like will be overdone at times.

The sum to be paid not to exceed $50,000,000 in ten years, to be paid about as follows:

First year.....	$3,000,000	Seventh year.....	$5,000,000
Second year.....	4,000,000	Eight year.....	5,000,000
Third year.....	5,000,000	Ninth year.....	5,000,000
Fourth year.....	6,000,000	Tenth year.....	5,000,000
Fifth year.....	6,000,000		
Sixth year.....	6,000,000	Total	$50,000,000

It is necessary to begin on smaller amounts, for there are not yet ships to earn so much, and, after the sixth year, we should have had such -experience as to enable us to sail on with less direct assistance and with the live enterprise of our people, when a paying investment presents itself, I think before the end of ten years, we would have ships enough to get this bounty to be paid to such ships only as are owned in the United States, and not earning government bounty from mail subsidy, and vessels made in this country from American products, officered by citizens of the United States and the crew to be composed of one-half, at least, American citizens when leaving home ports. For the first five years of the payment of this premium, then, after that, at least two-thirds of the crew must be citizens of the United States when the ship is leaving the United States for a foreign port, and no bounty to be paid on more than 10,000 miles in the same voyage going or coming. All other requirements, such as government inspection of ship, officers, etc., and the classification for insurance, etc., not to be any of the requirements of this bill, it all to be taken care of as usual. If such a bounty is not earned or paid it would remain in the Treasury, and, if earned as above and paid out for such services, let us look at some of the advantages that would be derived from it.

The question may be asked: What will become of this ocean shipping of ours at the end of the ten years? If it is then known to be a good thing, a bounty can be continued a few years longer. But there is a fair chance, our ships so assisted, we would learn the art of much cheaper construction and operation, and might get along without further direct assistance from our government, as in the case of the trade done by United States ships on the great lakes, which at present is much greater than all the ocean trade done by the United States ships. They will have had practically a protected trade and cheap raw material to build from, experience, competition with each other, and forcible, intelligent management, with improved appliances to quickly and cheaply handle cargo. They will have learned to do the cheapest transportation in the world, for, notwithstanding the fact that high wages are paid, lake ships are making a fair profit at rates only half the cost of doing the same work, with the same ships, on the same draft of water, of ten years ago. This comes from forcible, intelligent knowledge of how to do the work, and much of the same results, I think, would come if we had ten years of such right of way at sea.

The advantages of making, owning and operating our own ships, and then, through a subsidy, such as this, hunting for trade both ways, cannot be seen at a glance. There are so many good features to it in so many ways, directly and indirectly. It should have careful, honest consideration, and not the sentiment of foreign shipowners and their agents. I think the art of shipbuilding and the cheapest system of operating them is now at hand, and that we may yet be among the foremost in this matter, even if we pay more to our intelligent workers; so let us assist the ship somewhat along these lines and make three or four hundred modern built ships trading to and from this country, and we shall then have thousands of agents to increase our foreign trade with the world at large.

MARINE RECORD

ESTABLISHED 1878.

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CLEVELAND, O., FEBRUARY 4, 1897.

Inquiries for copies of the Marine Record reached this office during the week from Liverpool, Ceylon and Mexico.

The weather has at last hardened up until ordinary navigation is now out of the question. The ice breakers on Lakes Michigan and Erie are having all they can do to keep open communication between the several ports.

The thanks of the Record are due to Charles D. Sigsbie, Commander U. S. N. hydrographer, for a copy of the pilot chart of the N. Pacific for February. The delineation is up to the usual standard and contains most valuable information for all interested in maritime affairs.

The British board of admiralty have commenced a project of dockyard extension which involves the expenditure of £6,000,000 (say $30,000,000) while our people are discussing the advisability of spending one or two millions on the same or similar schemes. There is nothing like being liberal and expansive in measures involving national sequence.

Relative to the importance of international classification, let us show that in this year's edition of the International Register of the Germanischer Lloyd, German Institute for the classification of Ships, it is stated that the society has now 109 agents and 181 surveyors in the principal seaports of the world; among this number 47 are in Germany, 37 in Great Britain, 40 in Asia, 38 in America, 20 in Australia, etc. Of the 4,122 vessels on the Register, 2,440 are German, 409 Swedish, 232 Danish, 256 Dutch, 299 Russian, 244 Norwegian, 67 British, 25 Spanish, 38 French, 14 Italian, and 98 belong to various nationalities.

It is quite an ordinary circumstance to find proposals from building, dredging and pile-driving contractors on government work doubling up, that is to say, what one contractor avers he can or will accomplish at a cost of, say, $1,000, another, and at times the most reputable and responsible firms will submit a proposal of just twice that amount, and even sometimes more. It is in connection with these continual improvements where the integrity and business judgment of the engineer officers in charge of the district stands between the people or government, and dishonesty or greed, and it is a matter for congratulation that among the millions of dollars annually expended not the slightest aspersion can be cast upon the disbursers of the amount regularly appropriated by the government.

CANALIZING TO THE COAST.

The deep waterways project is given a substantial standing by the report of the commission appointed by President Cleveland under the statute enacted by congress at its last session. The report is an unqualified endorsement of the ship canal project between the United States and Canada, and embraces a recommendation for an appropriation of $250,000 for preliminary surveys. It is an exhaustive document and covers all phases of the case, concluding with a strong indorsement of its entire practicability. The report is in all respects unanimous and recommends a waterway depth of 26 to 30 feet. No doubt a complete engineer's report on the proposed canal would determine its entire feasibility and give the project new supporters among those who now look upon this canalizing to the coast as a much-to-be-desired impossibility.

The experiences and lessons of the great Chicago drainage canal have opened the eyes of engineers and practical men to the evolution in canal construction which has been wrought by the introduction of modern machinery and improved engineering methods. A recent article in the Scientific American is authority for the statement that the rock work on the Chicago drainage canal costs only 77 cents a cubic yard, and the earth only 29 cents—figures which put the calculations of the old school of contractors all out of joint.

The commission was a capable and eminent one, and its endorsement will put the canal question before the country as an active problem. The combined influence of the congressmen of the great central and northwestern states is greater now than ever, and the people are unanimous in seeking relief from high carrying charges for the enormous and increasing products and consumption of this large area.

The deep waterways question on the lakes and the canalizing to the coast is now in better form than ever before.

THE GREAT LAKES REGISTER.

A new departure in compiling a classification register for lake tonnage has been entered into this season and it is now thought that a reliable and impartial rating for all classes of lake vessels will be thoroughly established.

The new book is to be named the "Great Lakes Register." This title we presume will not conflict with that of the "Great Lakes Register of Shipping," published at Cleveland in 1893. In the collaboration of data necessary to print the above-named work, ten competent surveyors with Capt. F. D. Herriman of Chicago as surveyor general and Mr. Walter Miller of Cleveland as head of the engineering department, have been enrolled and in this connection we can not speak too highly of the latter selection.

The class gradings in the new register will range from 100 to 50, dropping by fives, that is, 95, 90, 85, etc., thereby giving the benefit of any slight advantage by improved equipment, such as the well-appointed and well-found vessel as compared with the tonnage indifferently equipped notwithstanding the hulls may be of equal structural value. A column in the new register will contain symbols representing the number of watertight bulkheads, wrecking wells, double bottoms, diagonal strapping, centreboard, etc., thus enabling underwriters and others interested to arrive at the comparative structural values of the special tonnage required.

A significant mark for the highest class built under special survey is the well-known symbol of a crescent, and this we opine is in excellent taste on the part of the syndicate getting out the new register in which will be contained the class and rating of all lake vessels.

THAT NICARAGUAN WATERWAY.

There is not the slightest doubt but that a waterway through Central America would be as advantageous to the commerce of the United States as the Suez is to Britain.

Two years ago the government appropriated $25,000 for the expense of a commission to go down and make an examination of the route and report on the engineering features of the project. The small appropriation did not permit of anything but a cursory view by the engineers, and the commission came back merely qualified to report that if it had had more money it could have found out something about the obstacles to be encountered in carrying out the project.

The merits of such a waterway or artery of commerce is no longer a question in the public mind. The very general sentiment favors the control of the canal by the United States, and it would be little less than disgraceful to let the opportunity to dominate this inter-oceanic passage leave our hands. But all the plans of semi-governmental participation in the construction should be cast aside and the United States government itself begin at the foundation with a new treaty, a complete survey, learn the actual cost as near as it could be estimated, and there is no doubt but that the citizens, that is, their representatives in congress, would endorse the entire project.

The way the question of building war ships on the lakes is being bandied about, some saying it is a very essential departure, and others stating that it would not be of any effect, as to reach the coast the ships would have to pass through a long land-locked stretch of Canadian waterway, reminds us a good deal of the old down-East skipper, who after getting ashore in the morning, boasted that he had left his crew the happiest lot of fellows in the harbor. Upon being asked to explain himself he stated that he had promised them all a good licking; he had thrashed half of them before he came ashore and they were happy it was over, while the other half were more than pleased that they had escaped. And as it would appear with the present advocates and those who speak derogatory of wiping out the international treay relative to war vessels being constructed on the lakes, all are pleased because only a little has been accomplished.

A bill has just been introduced in the Illinois senate by Mr. Sparks revising the law in relation to the State Naval Reserves and permitting a naval force of four ships' crews, or complements, four divisions constituting a ship's crew and making in all sixteen divisions. It is further ruled that in time of peace, there shall not be maintained more than four such ship's crews or complements, organized as herein provided, and which shall constitute the naval force of the State of Illinois, but the commander-in-chief shall have power in case of war, insurrection, invasion or imminent danger thereof, to increase the said force beyond such limit of four ships' crews or complements and to organize the same as the exigencies of the service may require.

The Goodrich Transportation Co., Chicago, are now figuring on a passenger steamer to cost about $200,000. With the lake shipyards well supplied already and new contracts cropping up each week there is no fear of our commerce in any way declining. The Record has already held that shipbuilding and its connecting industries best keeps pace with the progression of trade and such an idea is fully borne out by the facts regularly presented in our columns.

That business is picking up again, as it should do, is evident from the several hundred dollars' worth of new contracts for advertising appearing in this issue of the Record. Mr. Fred W. Martin, Racine, Wis., the Cleveland City Forge, Capt. Coe, manager, the American Shipmasters' Association, publishing the record of American and foreign shipping, N. York, as also John E. Thropp & Sons of Trenton, New Jersey, are advertising contracts this week and show how widespread the good feeling exists. Or as he would say from Wisconsin to New Jersey.

IF CORRECTLY REPORTED.

During the intense cold snap on Monday of last week, Capt. Stines of the Goodrich liner Iowa reported that the fog whistle at Sheboygan was not sounded. When confronted with the charge Lightkeeper Carpenter admitted its truth, but defended the omission by saying that he regarded the "fog" on that day as merely a surface mist as he was able to see many of the towers of the city which he ordinarily utilizes as guides. The government rules, he claimed also, leave the sounding of the whistle to the judgment of the attendant, and he did not think the fog was dense enough to waste government fuel upon. Besides, the Iowa found the harbor without the aid of the whistle while he was uptown.

If Lightkeeper Carpenter has been correctly reported in his own defense by the Sheboygan Telegram it is time that the lighthouse inspector of this district be informed of the fact that he has in his jurisdiction a fog whistle attendant who judges the density of fog and mist upon the water by looking landward, and who construes the government rules at his own discretion.

COMMERCE THROUGH ST. MARY'S FALLS CANAL.

Secretary Lamont sent to Congress on Tuesday an interesting letter showing the amount of freight that passed to and from Lake Superior through the United States and Canadian canals at Sault Ste. Marie, Mich., during the season of 1896. This tonnage is published in The Record each month during the season of navigation, however we give the Secretary's report as follows. The United States canal was open from April 21 to December 8, 232 days, while the Canadian canal was open from May 7 to December 10, 218 days. The total amount of freight which passed through both canals was 16,239,061 net tons, an increase over the season of 1895 of 1,250,000 tons. There was really a decrease of 3,383,556 tons in the amount of freight passing through the United States canal, but this was due to the fact that the Canadian canal had not before been open for any entire season and for that reason the United States canal was used for nearly all navigation in 1895. The Canadian canal was open only eighty-seven days in that season. In 1896, 500,000 tons of soft coal, 17,000,000 bushels of wheat, and 19,000,000 bushels of other grain passed the canals, an increase over 1895 of 23 per cent. in coal, 37 per cent. in wheat, and 23 per cent. in other grain. The tonnage which decreased in 1896 was hard coal, 10 per cent.; salt, 12 per cent.; iron ore, 2 per cent.; lumber, 8 per cent.; and building stone, 26 per cent. The value of the freight in 1896 was $186,153,429, an increase over the value of 1895 of $26,578,299. To show the rapid increase in the use of these canals the total annual freight figures since 1881 are given. In that year only 1,567,741 tons passed the canals. In 1891 the tonnage had increased to 8,888,759, and in 1896 this was almost doubled.

ABSTRACT OF BIDS.

The Abstract of Bids opened at Duluth, Minn, February 1, 1897, by Major Clinton B. Sears, Corps of Engineers, U. S. A., for repairs to canal pier, Duluth, Minn, are as follows:

NAME AND ADDRESS OF BIDDER.	New timber in place below datum. 3,000 ft. B. M. more or less, with fastenings, per 1,000 ft.	New timber in place above datum, 9,000 feet more or less, with fastenings per 1,000 ft.	Taking up old timber, 1,200 feet B. M. more or less, per 1,000 ft.	Relaying old timber, with fastenings, 900 feet more or less, per 1,000 feet.	Furnishing and placing 25 piles, more or less, as per Par. 5 of Bid, per pile.	Furnishing and placing 50 piles, more or less, as per Par. 6 of Bid, per pile.	Total.
1. Whitney Bros., West Superior, Wis.	$21.10	$19.00	$ 8.00	$ 8.00	$ 4.00	$ 5.00	$ 616.10
2. Samuel Meniece, Duluth, Minn.....	20.00	16.00	1.50	3.00	3.75	5.00	552.25
3. J. W. Preston, Duluth, Minn.....	40.00	30.00	20.00	10.00	4.50	6.50	860.50
4. John Somerville, Duluth Minn.....	35.00	22.00	5.00	6.00	6.00	7.20	824.40
5. Tulloch Bros. & McGee Duluth, Minn.....	97.00	19.50	4.00	7.00	4.75	5.00	846.35
6. Lewis G. Moran West Superior, Wis..	25.00	20.00	6.00	6.00	6.00	6.00	717.60
7. F. P. Tims, West Duluth. Minn..	35.00	20.00	6.00	10.00	7.00	7.50	851.20
8. J. B. Wanless & Co., Duluth, Minn.....	21.00	19.00	5.00	5.00	4.00	4.25	557.00
9. David Hood, Duluth, Minn.....	90.00	24.00	12.00	12.00	4.00	5.00	861.20
10. John Shulene, Duluth, Minn..... ..	41.79	24.79	10.00	12.79	4.10	4.50	699.49

Major Clinton will of course accept the lowest bidder and in this instance it appears that Samuel Meniece of Duluth is the successful competitor for the work.

LORAIN'S NEW SHIPYARD.

The deed to the tract of land which Lorain conveys to the Cleveland Shipbuilding Co., was formaly passed on last week and active work will soon begin on the site. Two slips each 500 feet in length will be dug now, which will give the yards a capacity of four large vessels at one time and with the dry dock six. Should it prove necessary the slips will eventually be lengthened to 1,000 feet to double the capacity of the plant. The company's plans show that its intention is to build boiler and machine shops at Lorain, and their ultimate design, it is thought, is to have located in that city their entire plant, but their offices will remain in Cleveland.

HIGH SPEED.

Torpedo boat No. 6 was taken out of Narragansett Bay last week for her first official builders' speed trial. She was taken over a measured mile course, under three boilers and a full head of steam. The sea was calm.

The boat was in charge of Capt. Nat Herreshoff, and the result of her first work was 26.85 knots an hour, with a steam pressure of 180 pounds, leaving forty pounds in reserve to make the speed of 27½ knots, which is required by the contract. The builders say that this can be done with ease in view of the initial trial trip. Commander George A. Converse, who represented the Navy Department, expressed satisfaction at the speed attained.

The torpedo boat Cushing attempted to follow the new vessel, but she was soon distanced.

BIDS ON GOVERNMENT WORK.

Abstract of Proposals received at Duluth, Minn., and opened January 30, 1897, by Major Clinton B. Sears, Corps of Engineers, U. S. A., for repair to breakwater at Agate Bay, Minn.

NAME AND ADDRESS OF BIDDER.	For timber in place, including the iron and fastening, etc., 43,000 ft B. M., more or less. Per 1000 ft.	For new stone in place, about 70 cords, more or less. Per cord.	TOTAL.
John Somerville, Duluth, Minn..	$21.00	$ 5.00	$1288.00
Porter Bros., Duluth, Minn.....	39.00	4.75	2009.50
A. & D. Sang, Duluth, Minn..	28.00	6.80	1680.00
Wm. McCurdy, Houghton, Mich.			
Alex. McCurdy, Duluth, Minn..	22.50	5.00	1575.50
John Shulene, Duluth, Minn...	22.05	4.75	1280.65
Saml. Meniece, Duluth, Minn..	18.75	4.75	1138.75
Tulloch Bros. & McGee, Duluth,	43.50	10.00	2570.50

Samuel Meniece, of Duluth, being the lowest bidder, Major Sears will no doubt have the econtracvt awarded to him.

COAL RECEIPTS AT THE HEAD OF THE LAKES.

Receipts of coal at the head of Lake Superior for 1896 were 2,058,809 tons—594,859 tons anthracite and 1,463,950 tons bituminous. In 1895 the total receipts were 1,837,052 tons—543,645 hard and 1,293,407 tons soft; in 1894, 2,275,139 tons—632,234 hard and 1,142,905 soft; in 1893, 2,279,372 tons—640,910 hard and 1,638,432 soft; in 1892, 1,683,381 tons—490,367 hard and 1,193,214 soft.

THE CORLISS BILL.

Goderich, Ont., Feb. 1, 1897.—Editor Marine Record.—Being a subscriber to your paper for a number of years, will you kindly answer the following questions regarding the Corliss bill? 1st. Are sailors, deck hands and firemen allowed to come from any British port and ship on American steamers or vessels without the necessary citizens' papers, providing there has been no former contract made with them? By answering the same you will oblige.

BOATSWAIN.

The above mentioned help is excluded from the Corliss bill and the law stands as formerly.—(ED.)

A GOOD RECORD.

Capt. John D. Persons, who lately visited Cleveland with his family, is having a full share of notoriety through the daily press. The Record is more than pleased to find that at least one branch of our service is being given its full due at this time.

Perhaps a characteristic instance of Persons' record may be contained in the following report from Thunder Bay: The longest and perhaps the hardest rescue in the history of the station was the saving of the schooner C. O. D. off Black river. The life savers put in some sixty miles of rowing that day. The wind was a perfect hurricane and it began to snow and grow cold. The mate of the schooner saw them coming and said: 'There go some brave fellows to hell.' Afterwards he said to me, 'I never thought you would reach the schooner alive.'"

The well and favorably known firm of Jenkins Bros., valve and packing manufacturers, will, about the middle of the month, remove their Boston store from Milk street to 17 Pearl street. Mr. J. D. Stiles, manager of the Boston department, does not want to miss a call from any of his business friends on account of the change of location and those interested in steam goods will find trade facilitated by the removal into more commodious and otherwise improved quarters on Pearl street.

A STEADY PLATFORM AT SEA.

Written for The Marine Record.

By. W. E. Redway, Buffalo, N. Y.

CHAPTER III.

About four years ago Sir Nathaniel Barnaby, K.C.B., ex-chief constructor of the British Navy, read a paper before the Iron and Steel Insitute at Pittsburg, upon the "Protection of Ships Against Foundering," and in the course of his remarks stated that he had been consulted by business men on both sides of the Atlantic as to the possibility of building a steamship which would neither roll, pitch nor heave in the sea. He considered it practicable with a vessel 1,000 feet long, 300 feet wide, drawing 26 feet. Such a vessel having 60,000-horse power would have an ocean speed of 15 knots. After some interesting statements as to working, loading and discharging, he went on to say: "The question whether we shall effect our conquest by mere size, or by mechanical devices in ships of more moderate proportions, depends upon the success of certain efforts which are now in progress in another direction." He referred presumably to the experiments made by the British Admiralty with a loose weight of water moved violently about from side to side, by the heavy rolling of the ship, in a compartment, specially constructed to contain it, thus tending to bring the ship to rest. Also to an experiment made by Mr. Beauchamp Tower, an eminent mechanical engineer, who has contrived a mechanical watchman dependant upon a long pendulum indicator, having sufficient weight to control a small platform carrying a gun or other weight. In a heavy rolling ship the inanimate but automatic watchman keeps the platform and its load level and at rest, the work so given off tending to steady the ship.

Another step has been taken by Mr. Thornycraft, the celebrated torpedo boat builder, who has contrived an ingenious device operated by a small hydraulic motor, and of such proportion that a 12-ton weight having a transverse range of about six feet, it is said, will control the motion of a ship having 250 to 300 tons displacement.

However alluring the possibilities of ultimate success by means of either of the mechanical methods referred to may be, it seems somewhat doubtful, whether, in the existing state of our knowledge of the subject, they could be conveniently applied, so as to control the rolling or pitching motion of a large ocean steamer. Assuming that the time has not yet arrived for Sir Nathaniel Barnaby's suggested vessel, and discarding any idea of submarine navigation, it would be well to see whether a fair approach to a solution of the question, cannot be reached in vessels of reasonable proportions, containing as far as possible the qualities which effected their various objects in the case of the "Bessemer," "Castalia," "Livadia," "Maintonomoh," "Devastation," and others previously described.

In addition to an absence of pitching and rolling, the ideal ship should, of course, neither heave nor fall in a seaway, but a brief study of the existing literature upon deep sea waves will show that in order to secure this immunity from vertical motion the vessel would have to be, at least, of sufficient length to reach and receive support, simultaneously, from three consecutive storm waves, and as these are about 500 feet long from crest to crest, and 30 feet high from trough to crest, it is evident that this desirable quality could only be secured in vessels, not less than 1,000 feet long, as suggested by Sir Nathaniel Barnaby. It is not probable that such a gigantic step forward as one from 625 feet to 1,000 feet will be taken at one operation, if at all; the idea may therefore for the present be dismissed as impracticable, and we may as well confine our endeavors to the reduction of pitching and rolling in ships of ordinary proportions, and bear with the heaving motion as best we can.

The causes which produce pitching and rolling in ships at sea must be understood before any attempt to mitigate them can be successful, and although it is not easy to make all these clear, without introducing mathematical reasoning, which the average reader would rather not be inflicted with, the attempt will be made in a few short paragraphs to give some idea what they are. First as regards pitching:

The pitching and ascending motions of a ship's bow and stern in a heavy sea are due primarily to an unequal distribution of weight and buoyancy at the ends; that is, to say, a vessel with very fine ends under water, having full and heavy bow and buttocks above water each containing many weights due to its internal equipment, such as

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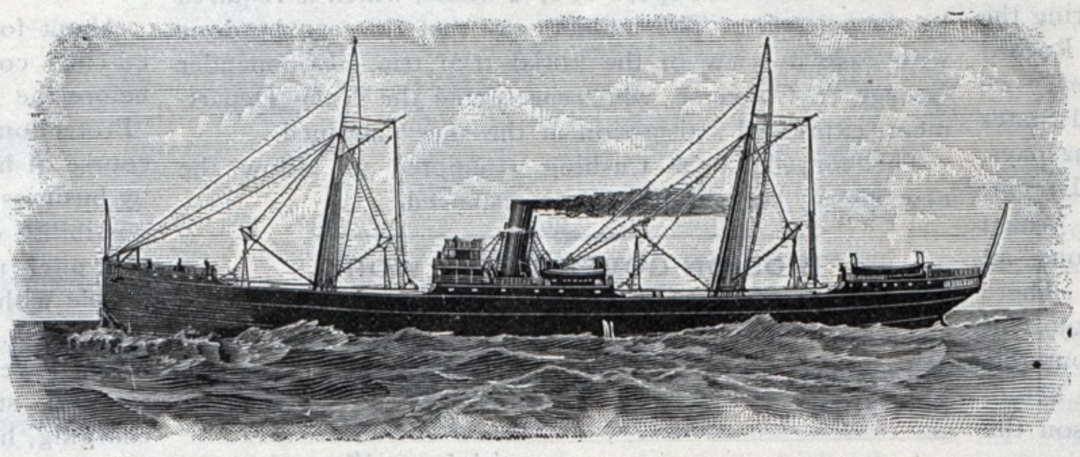

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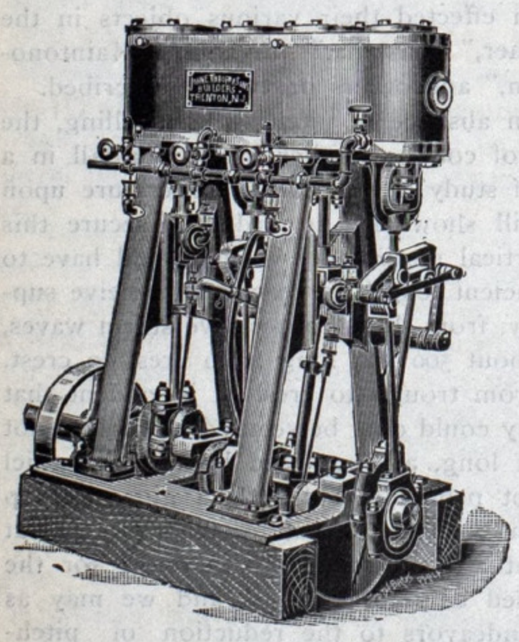

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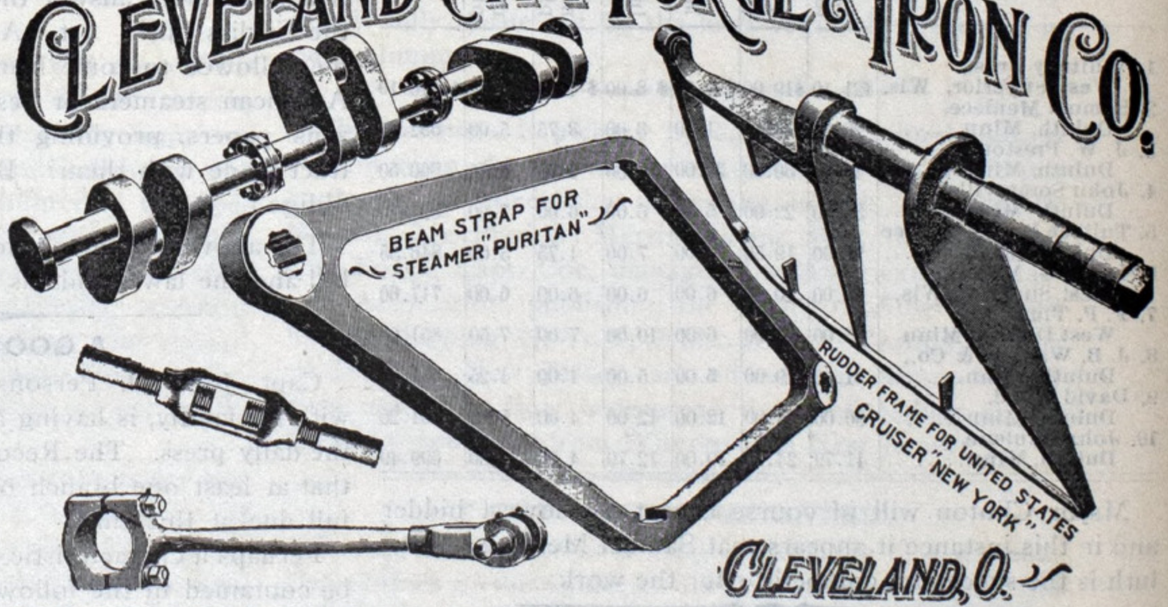

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anchors, chains, machinery, stores, etc., receives but little if any support from the buoyancy of the ends below the flotation line in still water, but the weight of those heavy ends and their contents are supported almost entirely by the midship portion of the vessel, where there is a corresponding surplus of buoyancy over the weight to be carried. The effect of these heavy overhanring masses being poured through a heavy head sea can be readily imagined. The enormous momentum acquired by the bow for instance, when passing over the top of an advancing wave, causes the ship to plunge headlong down over the slope which is passing under it and to bury itself fathoms deep, sometimes, in the advancing slope of the succeeding wave, until the excessive bulk of the consequently submerged portion has displaced a sufficient quantity of water, the buoyancy of which balances the momentum of the descending mass. The momentum having thus become exhausted, and instantaneous reaction takes place producing an upward or ascending motion of the bow, due to the excess of displacement of the submerged portion over its normal condition, which is equal in amount to the extra water displaced multiplied by its distance from the center of buoyancy which is near amidships. The intensity of this reaction causes the bow to fly up high in the air over the passing wave, and place it again in position to resume the stupendous buffetings which mark its onward course. Similar conditions as to vertical motion are applicable to the stern as to the bow, but whilst the function of the latter is to excavate a channel large enough to allow the vessel to pass through, that of the former is to adapt itself suitably to the wave of replacement, which always travels at the same speed as the ship and fills up the channel as fast as it is excavated. It is obvious that a much less arduous duty is required of the stern than of the bow, and as a consequence there is usually much less disturbance at the after end of a fairly well-formed vessel than at the fore end.

The obvious conclusions to be drawn from these remarks and that all heavy overhanging cutwaters and counters, bluff bows and full buttocks should be dispensed with and the buoyancy of the ends under water made to correspond as far as possible with the weight and bulk of what they have to support.

(Concluded in Our Next Issue.)

A TUG OWNERS FAILURE.

The Duluth Trust Co., assignee for B. B. Inman at Duluth, has filed an itemized schedule of his affairs. The assets foot up $99,730.22, and the liabilities amount to $171,459.45. The assets consist almost entirely of the tug fleet and various outfits, nearly all of which are incumbered by mortgages for various amounts. The vessels, together with their estimated value and incumbrances, are as follows: Steamer Belle Cross, mortgage $16,000, estimated value $1,000; barge Clement, mortgage $4,000, value $2,000; barge Chicago Board of Trade, mortgages $2,999.59 and $125, value $3,500; tug Effie L., mortgage $272.37, value $2,000; tug Inman, mortgage $13,240, value $15,000; tug Castle, mortgage $8,100, value $7,000; tug Lyon, blanket mortgage, value $4,000; tug Record, blanket mortgage, value $12,000; tug M. D. Carington, mortgage $10,000, value $10,000; tug Anderson, unincumbered, value $2,000; tug Buffalo, mortgages, $1,469.63 and $262.82, value $4,000; tug Pathfinder, mortgage $4,457.50, value $2,000; tug Fiske, mortgage $3,786.63, value $3,500; tug Adams, mortgage $5,525, value $3,500; sternwheeler Henrietta, mortgage $3,000, value $1,000; lighter Fee, mortgage $210.50, value $2,000; lighter Thompson, mortgage $1,836, lost at Two Harbors; tug E. T. Carrington, unincumbered, value $1,000. Bills receivable amount to $8,373.89, a wrecking outfit is valued at $7,510, a rafting outfit at $1,492.50, and offices and fixtures at $520. These are the principal assets.

The liabilities are composed principally of coal and supply bills and unpaid balances on boats secured by mortgages. Labor claims amount to about $9,000.

EASTERN FREIGHT REPORT.

The eastern freight reports furnished the Marine Record by Messrs. Funch, Edye & Co., New York, shows that the business for steamers transacted during the week, although large in respect to grain charters, presents no special charge from the lines established during the preceding period. At the close we find ourselves justified in stating that latent February business has been nearly, if not entirely, provided for as regards full cargoes of grain, that March trades have been largely covered by tonnage and that the inquiry on part of shippers is now turning towards April and later months. The figures obtainable for March may be quoted at 3s. 1½d.@3s. 3d. to Cork f. o. b., 3s. 3d@3s. 4½d. for Denmark, 3s. 7½d.@3s. 9. for Stettin, whilst quotations for April is 1½d. less. So far the sharp break in our grain prices does not appear to have brought about new business, but this may, of course, take place when the decline is supposed to have touched bottom. There is but slight inquiry for any commodity except grain and general cargo. Rates for large steamers from the grain ports for general cargo are 2s. 9d. bid for March, 2s. 7½d. for later month. In the Gulf and Atlantic cotton ports inquiry is slackening off, and at the moment confined to near-by tonnage. Some boats having been fixed for timber from the Gulf, the demand thence is lighter at the moment.

We can report no important change in our market for sail tonnage. Rates remain firm and, in some instances, advanced freight had to be paid for spot vessels over pressing business. We find more inclination to charter to arrive on the part of shippers to the Colonies, and, compared to offers made a few weeks ago, better rates are now obtainable. Case oil freight remain steady, without brisk demand, but apparently any change in rates must be for the better since offers of tonnage are very limited. The charter mentioned in our subjoined list of two vessels from Brunswick covers old business effected some time ago, but kept quiet until now. The demand for lumber tonnage to South America is very limited, but we hope for a speedy revival in this trade.

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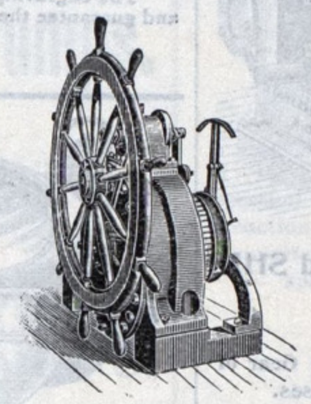

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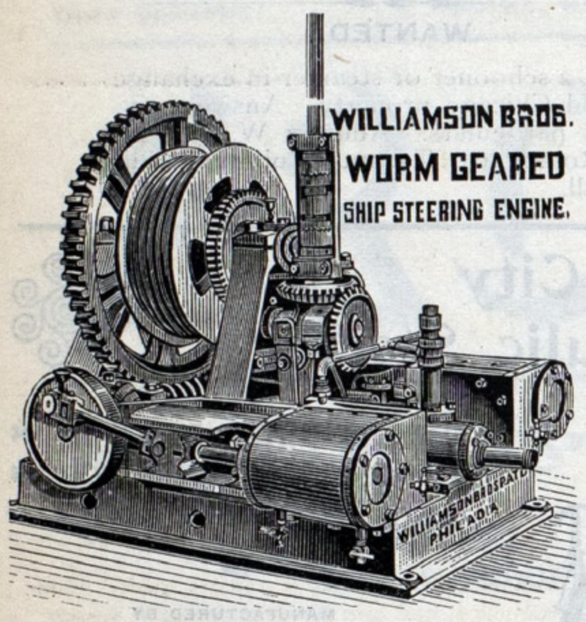

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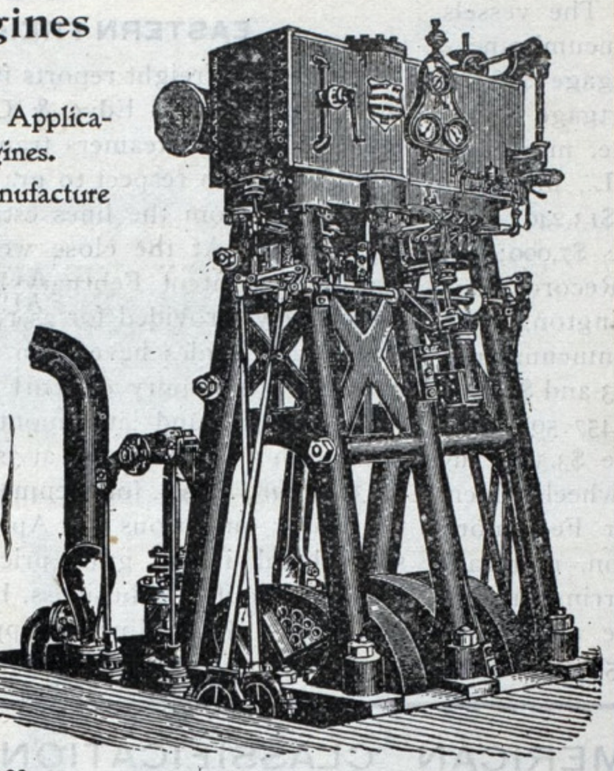

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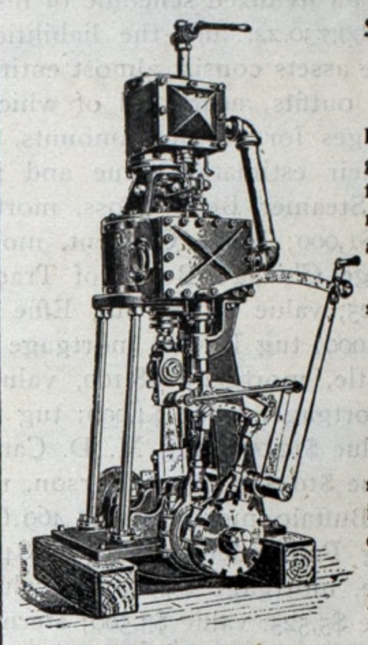

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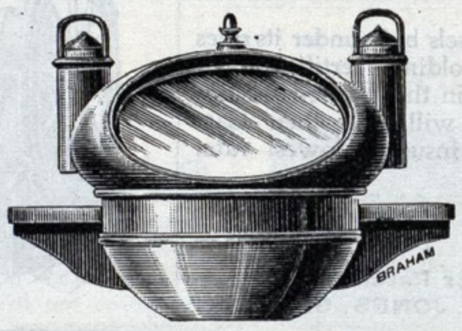

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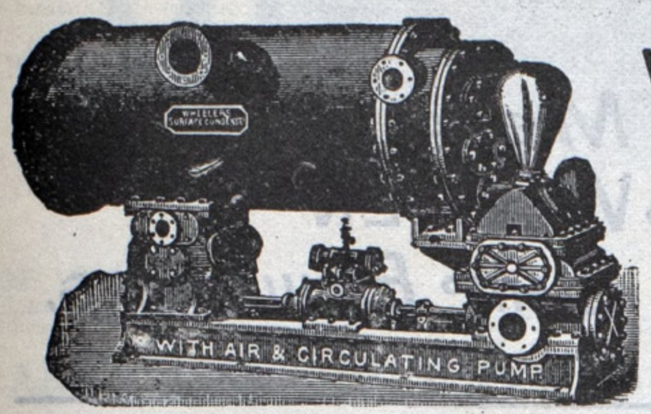

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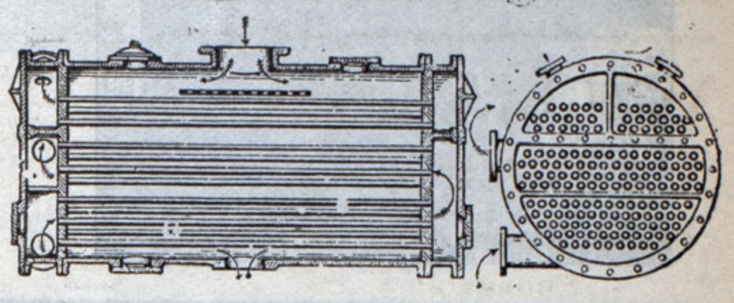

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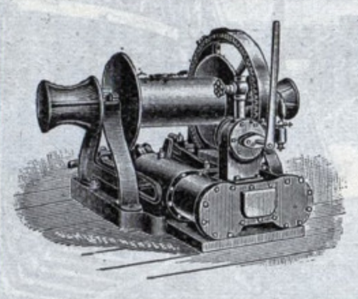

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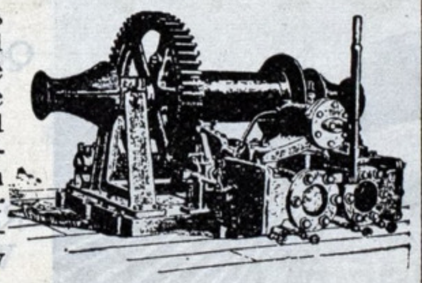

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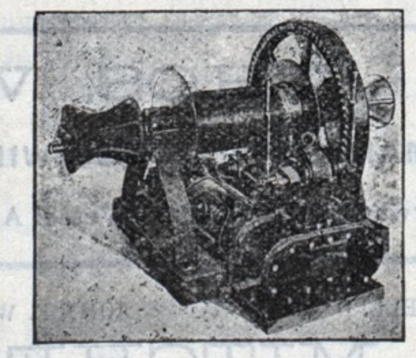

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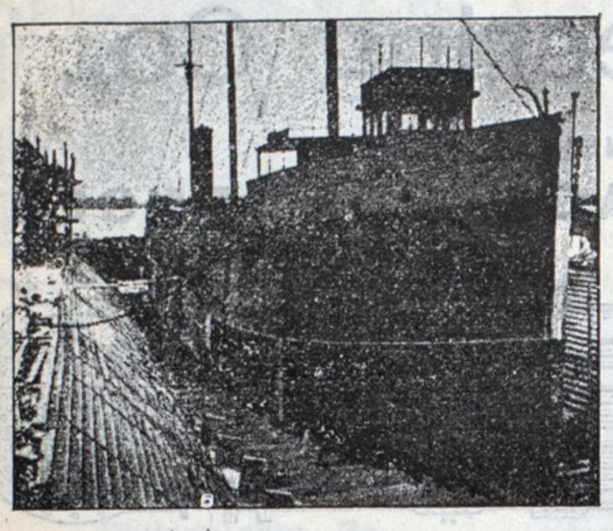

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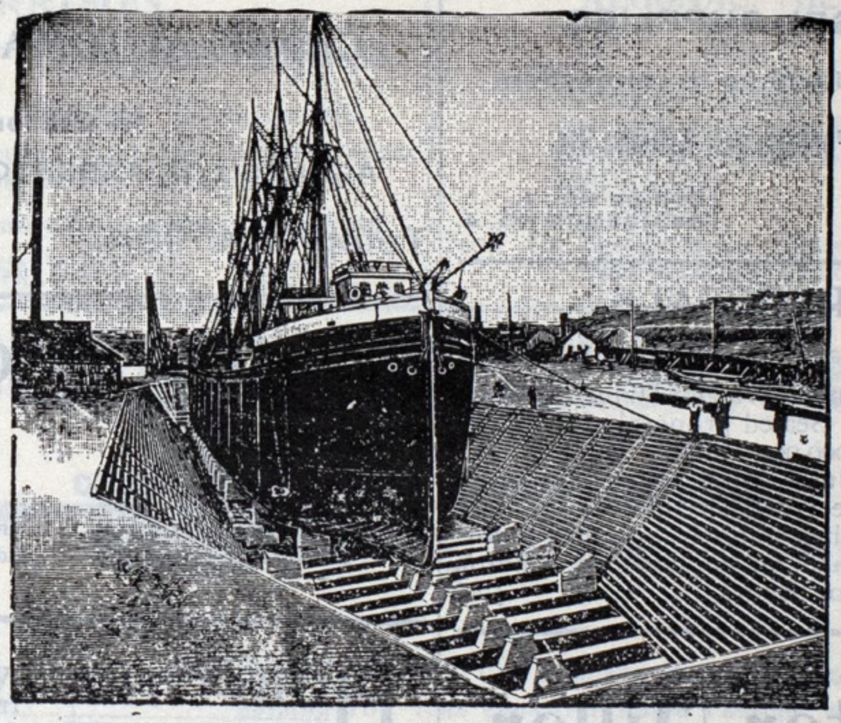

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